

Appln. No.: 09/964,303


Reply to Office Action dated July 1, 2003

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Cancelled)

2. (Original) A system comprising:

 a first heat pipe having an evaporator and a condenser, the first heat pipe being mounted with the evaporator inside the canister and the condenser outside the canister;

a second heat pipe having an evaporator thermally coupled to the condenser of the first heat pipe, the second heat pipe having a condenser; and means for dissipating heat from the condenser of the second heat pipe.

3. (Cancelled)

4. (Original) A system for cooling a canister, comprising:

a first heat pipe having an evaporator and a condenser, the first heat pipe being mounted with the evaporator inside the canister and the condenser outside the canister;

a second heat pipe having an evaporator thermally coupled to the condenser of the first heat pipe, the second heat pipe having a condenser;

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a third heat pipe having an evaporator thermally coupled to the condenser of the second heat pipe, the third heat pipe having a condenser; and means for dissipating heat from the condenser of the third heat pipe.

5. (Original) The system of claim 4, wherein the canister is at least partially buried below ground, and the first heat pipe is positioned entirely below a ground surface.

6. (Original) The system of claim 4, wherein the second heat pipe is partially buried below the ground surface, and partly above the ground surface.

7. (Original) The system of claim 4, wherein the third heat pipe is completely above the ground surface.

8. (Original) The system of claim 4, wherein the second heat pipe is a thermosyphon.

9. (Original) The system of claim 4, wherein the evaporator of the third heat pipe is oriented substantially vertically, and the condenser of the third heat pipe is at a substantial angle away from vertical.

10. (Original) The system of claim 9, wherein the angle of the condenser of the third heat pipe is at least about 5 degrees from horizontal.

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11. (Original) The system of claim 4, wherein the first heat pipe is mounted to a motor housing of a flywheel system within the canister.

12. (Original) The system of claim 11, wherein the first heat pipe is mounted within a block of metal having a hole therethrough to receive the heat pipe, the block being mounted to the flywheel system.

13. (Original) The system of claim 4, wherein the canister is a vacuum housing.

14. (Original) The system of claim 4, wherein the heat dissipating means including a plurality of circular fins arranged in a fin stack.

15. (Original) The system of claim 4, wherein at least one of the heat pipes has a wick in the evaporator thereof that does not extend into the condenser thereof.

16. (Original) The system of claim 4, wherein at least one of the heat pipes has a wick formed of sintered metal.

17. (Original) An energy storage system, comprising:
a canister;

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an energy storage flywheel having a motor housing mounted inside the canister;

a first heat pipe having an evaporator and a condenser, the evaporator of the first heat pipe being mounted to the motor housing, the condenser of the first heat pipe outside the canister;

a second heat pipe having an evaporator conductively coupled to the condenser of the first heat pipe, the second heat pipe having a condenser;

a third heat pipe having an evaporator conductively coupled to the condenser of the second heat pipe, the third heat pipe having a condenser interfacing to a heat dissipating means.

18. (Original) The system of claim 17, wherein the second heat pipe is a thermosyphon.

19. (Original) The system of claim 17, wherein the evaporator of the third heat pipe is oriented substantially vertically, and the condenser of the third heat pipe is at a substantial angle away from vertical.

20. (Original) The system of claim 19, wherein the angle of the condenser of the third heat pipe is at least about 5 degrees from horizontal.

21. (Original) The system of claim 17, wherein the canister is a vacuum housing.

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22. (Original) The system of claim 17, wherein the heat dissipating means include circular fins arranged in a fin stack.

23. (Original) The system of claim 17, wherein at least one of the heat pipes has a wick in the evaporator thereof that does not extend into the condenser thereof.

24. (Original) The system of claim 17, wherein at least one of the heat pipes has a wick formed of sintered metal.